

# Northumbria Research Link

Citation: Palamida, Eftychia, Papagiannidis, Savvas and Xanthopoulou, Despoina (2018) Linking young individuals' capital to investment intentions: Comparing two cultural backgrounds. *European Management Journal*, 36 (3). pp. 392-407. ISSN 0263-2373

Published by: Elsevier

URL: <http://dx.doi.org/10.1016/j.emj.2017.06.004>  
<<http://dx.doi.org/10.1016/j.emj.2017.06.004>>

This version was downloaded from Northumbria Research Link:  
<http://nrl.northumbria.ac.uk/id/eprint/36714/>

Northumbria University has developed Northumbria Research Link (NRL) to enable users to access the University's research output. Copyright © and moral rights for items on NRL are retained by the individual author(s) and/or other copyright owners. Single copies of full items can be reproduced, displayed or performed, and given to third parties in any format or medium for personal research or study, educational, or not-for-profit purposes without prior permission or charge, provided the authors, title and full bibliographic details are given, as well as a hyperlink and/or URL to the original metadata page. The content must not be changed in any way. Full items must not be sold commercially in any format or medium without formal permission of the copyright holder. The full policy is available online: <http://nrl.northumbria.ac.uk/policies.html>

This document may differ from the final, published version of the research and has been made available online in accordance with publisher policies. To read and/or cite from the published version of the research, please visit the publisher's website (a subscription may be required.)



**Northumbria  
University**  
NEWCASTLE



**UniversityLibrary**

# **Linking young individuals' capital to investment intentions:**

## **Comparing two cultural backgrounds**

### **Abstract**

*By integrating the Entrepreneurial Intentionality Model and the Theory of Planned Behaviour, we explored the effects of human, social and financial capital on young individuals' investment intentions in two groups (97 English and 97 Greeks). Results indicated that human capital is directly and indirectly related to investment intentions via, first, subjective norms and consequently, personal attitudes, and perceived behavioural control, while social capital is only indirectly related to investment intentions via perceived behavioural control. In the individualistic group (English), human capital related directly and positively with investment intentions while social capital related indirectly to investment intentions via its positive relationship to subjective norms. With regard to participants from a collectivistic background (Greeks), human capital related indirectly to investment intentions via, first, subjective norms and consequently, personal attitudes, and perceived behavioural control while social capital related directly and indirectly to investment intentions via perceived behavioural control. Financial capital was only negatively related to investment intentions in the total and Greek sample.*

**Keywords:** Human Capital, Social Capital, Financial Capital, Investment Intentions, Cross-Cultural

## **1 Introduction**

New venture formation or growth is a resource-intensive process that is linked with the availability of financial capital or access to financial resources. When it comes to young individuals, the likelihood of engaging in entrepreneurial activities may be high (Lévesque and Minniti, 2006) but their access to financial resources is usually scarce. In order to boost venture creation and growth among young individuals, human and social capital may become of higher importance than financial capital. Young individuals may act as bricoleurs and utilise whatever resources are at hand (Baker and Nelson, 2005) in order to create or grow a venture. Venture creation and growth can be considered the output of different types of capital investment from various investors. Young bricoleurs may act as potential “alternative” investors that follow an effectuation process in order to engage in entrepreneurial activities (Sarasvathy, 2001) by investing their (human, social, financial) capital in an already identified entrepreneurial opportunity (Palamida et al., 2015). This opens a new research agenda that will focus on our better understanding of why and when investors may engage in entrepreneurial creation and growth by investing not exclusively financial resources.

Therefore, this paper is based on Sarasvathy's (2001) theorisation regarding the processes that lead to entrepreneurial entry and growth by adopting the effectuation perspective. Instead of approaching entrepreneurship from a firm's perspective (e.g. Knockaert and Ucbasaran, 2013) this research is concentrated on the cognitive aspects (Chaston and Sadler-Smith, 2012). Particularly, leaving behind the over-researched traditional entrepreneur's view (individuals responsible for the idea generation e.g. Leitch, McMullan, and Harrison, 2013; Wright, Robbie, and Ennew, 1997), in this paper we focus on investment activities and potential investors (individuals from the general public – not formal or informal investors - responsible for investing human, social and financial capital in a business idea that they truly believe in (e.g. Palamida, et al., 2015).

Our research objective is to identify the underlying mechanisms that explain how different forms of capital are associated with young individuals' decisions to engage in investment activities. To do so, we incorporate the psychological antecedents of intentions that are proposed by the Theory of Planned Behaviour (TPB; Ajzen, 1991) in the Entrepreneurial Intentionality Model (EIM; Bird, 1988). Given that engaging in entrepreneurial activities presupposes the possession of human capital, social capital and financial capital, these diverse forms of capital may be conceptualised as personal factors that form investment intentions (Bird, 1998). Following Ajzen and Fishbein (2005), we argue that the effect of the different forms of capital on investment

intentions is transmitted via the proximal antecedents of intentions, namely, personal attitudes (PA), subjective norms (SN) and perceived behavioural control (PBC). In particular, we initially hypothesise that human, social and financial capital relate indirectly to intentions through the mediation of attitudes, norms and control.

Also, we explore possible differences in the processes that explain intentions to invest diverse forms of capital across young individuals from culturally diverse backgrounds. Considering that attitudes, norms and control are influenced by a wide variety of cultural factors, differences in the proposed relationships are expected to vary between individuals with a collectivistic versus an individualistic cultural orientation (Triandis, 1995, Markus and Kitayama, 1991, Ajzen and Fishbein, 2005). We study cultural values by means of membership of a specific national group (Schwartz, 1999), and we distinguish between individualistic and collectivistic cultures by focusing on young individuals with English and Greek nationality respectively (Hofstede, 2001). It is expected that the relationship between control/attitudes and investment intentions will be stronger in an individualistic culture, while the link between norms and investment intentions will be stronger in a collectivistic culture. Moreover, the relationship between human capital and the antecedents of intentions will be stronger in an individualistic culture, while the link between social/financial capital and the antecedents of intentions will be stronger in a collectivistic culture.

This research contributes to the entrepreneurship field by concentrating on effectuation processes and approaching venture creation/growth from the investors' perspective. In this sense, this paper is one of the few studies that go beyond the over-researched role of financial capital on investment by additionally providing evidence regarding the link between human-social capital and investment intentions. What is more, our research contributes to the interdisciplinary research of applied social psychology and entrepreneurship, since it tests the applicability of a new integrated model that combines personal and psychological characteristics. Based on this we explain how the diverse forms of capital are linked to investment intentions via the mediating role of the psychological antecedents. We also use specific measurements regarding human and social capital that go beyond the standardised and parsimonious measurements of previous research and therefore increase the validity of the link between capital and intentions. Moreover, this study contributes to the ongoing debate about the role of cultural characteristics in entrepreneurial engagement decisions by showing that cultural differences may differentiate the way that the diverse forms of capital will increase investment intentions. Finally, from a practical perspective our findings lead us to suggest that future interventions should take into consideration the diverse processes that boost venture creation according to the cultural background and create or re-create mechanisms that account for these forms of capital and cognitive

aspects that actually play a crucial role in the entrepreneurial process for each cultural background.

## **2. Literature Review**

Our conceptualisation regarding the role of human, social and financial capital in investment intentions is based on Bird's (1998) Entrepreneurial Intentionality Model and Ajzen's (1991) Theory of Planned Behaviour. Following Herron and Sapienz's (1992) proposition that the entrepreneurial process is holistically captured only when psychological variables are present, we extend Bird's (1998) theoretical assumption regarding the link between personal factors and intentions by incorporating the core motivational antecedents of intentions, namely personal attitude, subjective norms and perceived behavioural control as proposed in the TPB. As the indirect effect of capital on investment intentions is determined by individuals' personal attitudes, subjective norms and perceived behavioural control, which are influenced by a wide variety of cultural factors, differences in the proposed relationships are expected between individuals with a collectivistic and individualistic orientation (Ajzen & Fishbein, 2005; Markus & Kitayama, 1991; Triandis, 1995). Figure 1A presents the conceptual model of this study.

*PLEASE INSERT FIGURE 1A HERE*

## **2.1 The role of Personal and Psychological factors in Investment Intentions**

Bird (1988) postulates that the formation of entrepreneurial intentions is influenced by personal factors. Personal factors reflect individuals' qualities that concern the ability effectively to use developed skills and competences (i.e. human capital), the ability to interact efficiently with others within a family, a community or even an institution and extract benefits (i.e. social capital) and finally, the ability to possess certain financial resources (i.e. financial capital). The availability of human, social and financial capital can make it possible for an individual to invest in a venture. Previous research has provided evidence regarding the role of the diverse facets of capital in the formation of entrepreneurial intentions (Arenius and Minniti, 2005, Cetindamar et al., 2011, Davidsson and Honig, 2003) and in the investment intentions context (Palamida et al., 2015).

Additionally, entrepreneurial/investment intentions are influenced by psychological factors. The TPB (Ajzen, 1991) explains intentions by means of attitudes, norms and control. Attitudes represent individuals' positive or negative evaluations regarding engaging in a given behaviour. Norms describe individuals' beliefs about how close social ties think about their engagement in the given behaviour. Finally, control entails individuals' beliefs as to whether they possess the required capabilities to engage in a given behaviour, including the ability to control the environment successfully (self-



efficacy) or the specific behaviour (controllability) (Ajzen, 2002, Ajzen, 1991, Ajzen, 2001). Following Coleman's (1990) Social Capital theory and Bandura's (1997) Social Cognitive theory, we propose that positive social influences (i.e. norms) do not only relate directly to investment intentions but also indirectly by informing individuals' attitudes and control. Social norms transfer specific values that may cause favourable perceptions regarding a given behaviour (Prislin and Wood, 2005) and enhance individuals' beliefs about their capabilities to engage in a given behaviour (Wood and Bandura, 1989). This suggests that norms associate positively with individuals' attitudes and control, which in turn form intentions towards a given behaviour. The vast majority of previous research has verified this mediating role mainly among University students in diverse national contexts (e.g. Autio et al., 2001, Entrialgo and Iglesias, 2016, Liñán, 2008, Liñán and Chen, 2009, Liñán et al., 2013, Liñán et al., 2011). To the best of our knowledge, the only exception that confirmed both mediating effects in different sample groups is the work of Palamida et al. (in press), which based its findings on employed/unemployed individuals in Greece and the findings of Alonso-Galicia et al. (2015), which confirmed only the mediating role of attitude with a sample of academics in Spain. Thus concentrating on the young population, we formulate the following hypothesis:

***Hypothesis 1: Personal attitudes (a) and perceived behavioural control (b) mediate the relationship between subjective norms and investment intentions.***

In this paper we expect that psychological and personal factors jointly play a crucial role in the formation of investment intentions. Considering that engaging in entrepreneurial activities, such as investment activities, presupposes the possession of human, social and financial capital, the availability of these diverse forms of capital may be conceptualised as individuals' personal factors that form investment intentions. Following Ajzen and Fishbein's (2005) line of argument, the effects of background/personal factors in the form of human, social and financial capital in intentions could be traced to their influence on one or more of the proximal antecedents of intentions. In this regard, the motivational antecedents in the TPB explain intention, whereas other variables would have an indirect effect on intentions (Ajzen, 1991, 2001, 2002). In this regard, the possession of human, social and financial capital that can be invested in a new or existing venture a) may intensify positive attitudes towards the investment b) may enhance the close environment's positive perceptions regarding someone's decision to engage in the given behaviour (i.e., positive norms) and c) may boost someone's beliefs that investing is feasible and within his/her personal control (Fini et al., 2010, Kobia and Sikalieh, 2010, Locke, 2000, Gist and Mitchell, 1992, Bandura, 1977, Koellinger et al., 2007). Based on the above, we hypothesise:

***Hypothesis 2:*** *Personal attitudes (a), social norms (b) and perceived behavioural control (c) mediate the positive relationship between human capital and investment intentions.*

***Hypothesis 3:*** *Personal attitudes (a), social norms (b) and perceived behavioural control (c) mediate the positive relationship between social capital and investment intentions.*

***Hypothesis 4:*** *Personal attitudes (a), social norms (b) and perceived behavioural control (c) mediate the positive relationship between financial capital and investment intentions.*

## **2. The Role of Cultural Background in Investment Intentions**

Scholars may agree that entrepreneurial intentions are subject to cultural characteristics, but they still debate whether individualistic cultures provide a more conducive environment than collectivistic cultures for the formation of entrepreneurial intentions (Nguyen et al., 2009, Pruett et al., 2009, Shneor et al., 2013). The same ambiguity is expressed with regard to the applicability of TPB in diverse cultural contexts (Engle et al., 2010, Iakovleva et al., 2011, Moriano et al., 2012). While previous research is

balanced between the ‘aggregate psychological traits’ perspective, which assumes that individualistic cultures promote entrepreneurship, and the ‘dissatisfaction hypothesis’, which recognises that collectivistic cultures force entrepreneurial activity (Hofstede et al., 2004), we do not argue that either individualistic or collectivistic cultures are more or less entrepreneurial. Instead, based on Hayton et al.’s (2002) proposition, we adopt a cognitive approach to explore whether the hypothesized processes explaining intentions is invariant across two different cultural backgrounds.

Building on Hofstede’s (2001, 2017a) cultural profiles, we investigate individuals from opposing cultural backgrounds by contrasting individualistic and collectivistic cultures. It is also worth noting that we do not focus on the other key cultural dimensions, namely: a) Power distance, defining the extent to which the less powerful individuals in a society accept inequality in power and consider it as normal (Hofstede and McCrae, 2004, Hofstede, 1983) b) Uncertainty avoidance, describing the extent to which individuals within a culture feel threatened by uncertain / unpredictable / unknown / unstructured / unclear conditions which they try to avoid by maintaining strict codes/rules of behaviour and a belief in absolute truth (Hofstede, 2001, House et al., 2004), c) Masculine or Feminine, presenting the extent to which individuals within a culture value either material success, advancement, earnings, up-to-dateness, competition, ambition and assertiveness (values expected to be related with men) or quality of life, interpersonal relationships, friendly atmosphere, position security,

physical conditions, child care and concern for the weak (values expected to be related with women) respectively (Avsec, 2003, Hofstede, 2001) and the most recent dimensions of d) Long term orientation, describing the extent to which individuals maintain some links with their own past while dealing with the challenges of the present and the future and e) Indulgence. presenting the extent to which individuals allow relatively free gratification of basic and natural human drives related to enjoying life and having fun (Hofstede, 2017b). The main reason for not dealing with these dimensions in this study is that the most valid, reliable and representative cultural dimension that is linked with the determination of behavioural aspects is the differentiation between individualistic and collectivistic cultures (Oyserman et al., 2002, Triandis and Suh, 2002, Schimmack et al., 2005). From our perspective, the rest of the dimensions recognised in Hofstede's framework may not have a direct link with the relationships under investigation in this study. For example, the masculine/feminine dimension could be valuable in a future investigation that is based on the role of gender in the capital-intention relationship.

Based on their national differentiation, English individuals represent a cultural context of individualistic perceptions, while Greek individuals represent a cultural context of collectivistic perceptions (Hofstede, 2017a). The aim of this comparison is not to test differences in mean levels of the constructs under study. Rather, our aim is to explore which factors (and via which paths) play the most crucial role in forming

investment intentions across different cultural backgrounds. Irrespective of whether mean levels differ across cultural backgrounds, it is important to know whether the psychological processes that explain investment intentions are the same or if they vary across samples, and, if they vary, what these variations suggest. This investigation will allow an in depth understanding of how young individuals' investment intentions may be enhanced depending on their cultural background.

According to Hofstede (1980, 2001, 2010, 2017b), individualism-collectivism represents behaviour regulations that express the cultural tendency to place more value on the self or the group, respectively. Individuals with a collectivistic background feel as if they are an indispensable part of the group, they tend to align their personal interests to the groups' interests and protect the group that they belong to in exchange for the group's loyalty. The opposite applies to those with an individualistic background, who view themselves as relatively more important than the collective (Hui & Triandis, 1986; Hofstede, 2001).

When it comes to entrepreneurial intentions, previous research (Aloulou, 2016, Entrialgo and Iglesias, 2016, Guzmán-Alfonso and Guzmán-Cuevas, 2012, Iakovleva and Solesvik, 2014, Karimi et al., in press, Karimi et al., 2016, Moriano et al., 2012, Othman and Mansor, 2012, Palamida et al., in press, Roy et al., in press, Siu and Lo, 2013, Solesvik, 2013, Vinogradov et al., 2013) in most collectivistic cultures (China/Hong Kong, Greece, India, Iran, Latin America, Russia/Ukraine, Saudi Arabia,

Spain and Ukraine) has indicated that the norms-intention relationship was present. On the other hand, studies in individualistic cultures (Belgium/France, Canada, Finland, Germany, Poland) showed that the aforementioned link was insignificant (Goethner et al., 2012, Kaltenecker et al., 2015, Moriano et al., 2012, Obschonka et al., 2015, St-Jean et al., 2014, Varamäki et al., 2015). Collectivistic values, in terms of considering family and friends as an integrated part of the self and turning to them for help with decisions, are likely to strengthen the effect of social norms since, in such contexts, influential people within the social group play a crucial role in the formation of entrepreneurial behaviours (Oyserman et al., 2002, Aldrich and Cliff, 2003). Based on this argument it is expected that the positive effect of norms on investment intentions will be stronger for collectivistic than individualistic backgrounds.

Scholars have confirmed the link between attitude-control and entrepreneurial intentions both in individualistic cultures like Austria/Finland, Belgium/France, Canada, France, Germany, the Netherlands, Poland and the UK among individuals that were not exclusively University students. (Kautonen et al., 2013, Kautonen et al., 2015, Kibler, 2013, Liñán et al., 2013, Moriano et al., 2012, Sahut et al., 2015, St-Jean et al., 2014, Zapkau et al., 2015). This was also the case regarding collectivistic cultures such as Greece, India, Iran, Latin America, Malaysia, Russia/Ukraine, Saudi Arabia, Senegal and Spain (Aloulou, 2016, García-Rodríguez et al., 2015, Guzmán-Alfonso and Guzmán-Cuevas, 2012, Iakovleva and Solesvik, 2014, Karimi et al., in press, Othman

and Mansor, 2012, Palamida et al., in press, Roy et al., in press, Vinogradov et al., 2013, Zampetakis et al., 2016). Still, individualistic values are based on beliefs related to independence, control over one's life and strong identity. In such contexts, entrepreneurial intentions are more likely to be guided by one's attitudes and control beliefs than external expectations (Triandis, 1995, Siu and Lo, 2013). Therefore, we argue that the effect of attitudes and control on investment intentions will be stronger for individualistic than collectivistic backgrounds. Based on the above argument we hypothesise that:

***Hypothesis 5:*** *The relationship between personal attitudes and investment intentions (a) and the link between perceived behavioural control and investment intentions (b) will be stronger among individuals from an individualistic than a collectivistic cultural background.*

***Hypothesis 6:*** *The relationship between subjective norms and investment intentions will be stronger among individuals from a collectivistic than an individualistic cultural background.*

Moreover, according to the characteristics of individualistic and collectivistic cultures, human capital in the form of skills derived from education and experience may



be considered a purely individualistic indicator. To our knowledge, previous research shows that the link between human capital and venture creation intentions is present in an individualistic country such as Italy (Fini et al., 2010). It is of high importance to examine the role of human capital by encountering all three antecedents of intentions simultaneously. This implies that human capital will be more significant for investment intentions among individuals with an individualistic background and will therefore exert a stronger effect on the more proximal antecedents of intentions. It is therefore expected that individuals with entrepreneurial skills derived from education and experience will consider that their engagement in investment activities will be more beneficial for them, that they can control the investment process as they acquire the required knowledge and that their close environment will support this decision.

Previous studies on entrepreneurial intentions in collectivistic cultures such as India and Russia showed that the link between the social capital and personal attitudes / perceived behavioural control is present (Murugesan and Dominic, 2014; Tatarko and Schmidt, 2016). To our knowledge, the social capital-subjective norms link and the effect of financial capital on the antecedents of intentions has not been examined in collectivistic backgrounds. In this paper, we approach social capital in the form of social networks as a collectivistic indicator. Considering that financial capital is measured as the household income of the individual that summarises the income of the individual with the income derived from family, this form of capital is also approached as a

collectivistic indicator. Therefore, social and financial capital will be more important for investment intentions among individuals with a collectivistic background and will therefore have a stronger effect on personal attitudes, subjective norms and perceived behavioural control. Based on the above, we formulate the last hypotheses:

***Hypothesis 7:** The relationship between human capital and the antecedents of investment intentions will be stronger among individuals from an individualistic than a collectivistic cultural background.*

***Hypothesis 8:** The relationship between social capital (a) financial capital (b) and the antecedents of investment intentions will be stronger among individuals from a collectivistic than an individualistic cultural background.*

*PLEASE INSERT FIGURE 1B HERE*

### **3 Method**

#### **3.1 Procedure and Participants**

Data were collected via an online survey. Considering that this study was based on two different sample groups that have English and Greek as their native language, two different versions of the questionnaire were used so that our participants could

accurately understand the questions asked and precisely provide the answers that best suit their personal perspective (Cha et al., 2007). Given that the original scales that were used were developed in the English language, we translated the survey from English to Greek. In particular, we applied the Forward Translation with Testing technique, where the questionnaire was translated from the source language (English) to the target language (Greek version of the questionnaire) (Maneesriwongul and Dixon, 2004). Greeks with English as their second language translated the questionnaire from English into Greek. Next, three Greek academics in the field of business and management checked the translation for accuracy and revised specific parts as necessary. Participants were informed that the study concerned investment activities, defined as individuals' investment of skills, networks-personal contacts or financial resources in new/existing ventures. We focused only on those participants who reported that they did not have investment experience at the time that the study was conducted, so that the data were free from retrospective bias. Although investment intentions may be generated from individuals of any age, in this study we were interested in young individuals (18-38 years old) only, because for this group the availability of various forms of capital, and not only financial capital, seems more relevant. We collected data from two different groups. The first group refers to individuals with an English nationality (i.e., individualistic background), while our second group concerned individuals with a Greek nationality (i.e., collectivistic background).

The final study group consisted of 194 individuals, out of the 200 that initially matched our criteria in terms of previous investment experience, age and nationality. The English participants ( $N=97$ ) had a mean age of 26 years ( $SD=4.24$ ). The majority of the participants were women, while 36% were men. Thirty three participants had work experience, while 66% of the participants had never worked. Thirty eight percent of the participants were employed (with a mean of 12 hours working on average per week;  $SD=15.03$ ) at the time the study took place, while the rest were unemployed (62%). Most participants held a university degree (70%). Greek ( $N=97$ ) participants' mean age was 30 years ( $SD=4.74$ ). Thirty five percent of the participants were men and 65% were women. Thirty nine participants had no working experience, while the remaining 60% had work experience. Fifty four percent of the participants were employed (with a mean of 22 hours working on average per week  $SD=21.36$ ), while the remaining 46% were unemployed. Most participants held a university degree (81%).

### **3.2 Measures**

*Human Capital* was measured by means of skills derived from education and experience (Palamida, et al., 2015), Participants were asked to rate their level in six different skills gained through education and working experience. *Social Capital* was measured in terms of bonding and bridging social capital with scales that were adapted from Chen et al. (2009). Bonding Social Capital was determined with five subscales that measured members within the social circle, contacts with the members of the social

circle, trust in the members of the social circle, help gained from members within the social circle and level of resources-assets possessed by members of the social circle. Bridging Social Capital was measured by three subscales, namely contact with groups/organisations, help from groups/organisations and level of resources-assets possessed by groups/organisations. *Financial Capital* was measured by means of annual household income by asking participants to choose among seven annual income bands.

*Personal Attitudes* towards investment were measured with three items based on the previous work of Van Hooft and De Jong (2009), which were adapted so as to refer to investment activities. Participants were asked to indicate their level of agreement or disagreement regarding three statements that determine personal attitude. *Subjective Norms* regarding investment were measured with two statements adapted from Van Hooft and De Jong (2009). *Perceived Behavioural Control* towards investment was measured as a construct incorporating both self-efficacy and control. Five items from Van Hooft and De Jong (2009) were adapted so as to refer to investment activities. *Investment Intentions* were measured with three items adapted from Van Hooft and De Jong's (2009) previous work. Participants were asked to rate whether they intend and expect to engage in investment activities within the next three months and also indicate the time that they intend to spend on investment activities

Scales, sub-scales, items, response options and Cronbach's alpha for the study variables are presented in detail in Table 1.

*PLEASE INSERT TABLE 1 HERE*

In order to create a total score for human capital that combined skills derived from education, and skills derived from experience, we performed principal axis factoring (PAF) analysis with the total scores of these two variables. Analysis resulted in one total factor score for skills that explained 72% of the total variance. This factor score was used in further analyses. We also performed a PAF analysis with the five scales referring to bonding social capital, which resulted in one total bonding social capital factor explaining 36% of the total variance, and a PAF analysis with the three scales concerning total bridging social capital, which resulted in one bridging social capital factor explaining 39% of the total variance. The bonding and bridging social capital scales were used in our final PAF analysis, which resulted in one single, social capital factor, which explained 41% of the total variance. This factor was used in our main analyses.

We conducted multi-group CFAs to test the measurement invariance of the scales we used across the two national samples (Vandenberg and Lance, 2000). Given the small samples sizes, we performed this comparison separately for the scales measuring the Theory of Planned Behaviour (TPB) constructs, the scales measuring human capital, the scales measuring bonding social capital and the scales measuring bridging social

capital. Despite the fact that our results provide support for metric invariance across samples, these results should be interpreted with caution, mainly because the available samples are relatively small for such complex analyses with so many parameters that need to be estimated. The full analysis is available from the authors upon request.

### **3.3 Strategy of Analysis**

H1 to H4 were tested simultaneously by means of path analyses in the total sample with the AMOS 22. H5 and H6 were examined by means of multigroup path analyses across the two distinct groups (Group 1=Greek nationality/Group 2=English nationality). Seven observed (manifest) variables were included in the path models, namely human capital, social capital, financial capital, attitudes, norms, control and investment intentions. To test H1 to H4, we compared the fit of two models to the total data: the Hypothesised Model (HM; with paths from human capital, social capital and financial capital to social norms, attitudes and control, from norms to attitudes and control, and from norms, attitudes and control to investment intentions) and the Alternative Model (AM; Hypothesised Model + all direct effects from human capital, social capital and financial capital to investment intentions). In order to test H5 and 6, we compared two versions of the best-fitting model to the data, across groups: a model where all parameters were set to vary freely across the two groups, to a constrained model where all paths were constrained to be equal across the two groups. Invariance is supported

when these two models fit the data equally well. In cases of lack of invariance, we used the critical ratios for differences test to compare parameters across groups. When critical ratios exceed the value of |1.96| there is evidence that a parameter varies significantly across groups.

The fit of the models to the data was evaluated with the  $\chi^2$ , the related degrees of freedom ( $df$ ), and the  $\chi^2/df$  ratio, which should be  $< 3.00$ . We also evaluated model fit by means of the Normed Fit Index (NFI, where values  $>.90$  indicate a good fit), the Incremental Fit Index (IFI, where values  $>.90$  indicate a good fit), the Comparative Fit Index (CFI, where values  $>.90$  indicate an acceptable fit, and values  $>.95$  are ideal), the Root Mean Square Error of Approximation (RMSEA, where values  $<.08$  are reasonable, and values  $<.05$  are ideal), and the Standardised Root Mean Square Residual (SRMR, where values  $<.10$  are acceptable, values  $<.08$  are reasonable, and values  $<.05$  are ideal; Byrne, 2001). Nested models were compared on the basis of the chi-square difference ( $\Delta\chi^2$ ) test. The hypothesised indirect effects were examined by means of bootstrap maximum-likelihood estimation with 2000 re-samples and 95% confidence intervals (CIs) around the indirect effects. Mediation is supported when CIs do not contain zero.

#### **4 Results**

Means, standard deviations and correlations between the study variables are presented in Table 2. As the correlations between attitudes, norms, control and investment intentions



were relatively high in both groups, we performed a multigroup Confirmatory Factor Analysis to overrule concerns regarding potential overlap across the study variables. Results showed that the proposed four-factor model had an acceptable fit to the data ( $\chi^2=316.47$ ,  $df=118$ ,  $\chi^2/df=$  , NFI=.85, IFI=.90, CFI=.90, RMSEA=.09, SRMR=.06) and had a superior fit than all six alternative three-factor models, all three alternative two-factor models and the alternative one-factor model

*PLEASE INSERT TABLE 2 HERE*

Path analysis results that concern the total sample (see Table 3) showed that the Hypothesised Model (HM) fits well to the data with all fit indices meeting the criteria, except for RMSEA, which was  $>.08$ . Next, we tested Alternative Model 1, which was similar to the HM, but it also included all direct effects from human, social and financial capital to investment intentions. This model was a fully saturated model and as such had a perfect fit to the data. Therefore, it made no sense to compare it to a non-fully saturated model. An investigation of the parameter estimates of the Alternative Free Model 1 indicated that human capital ( $\gamma = .11$ ,  $p < .05$ ) and financial capital ( $\gamma = -.13$ ,  $p < .01$ ) related significantly to investment intentions. Therefore, we tested Alternative Model 2, which was identical to the HM, but included the aforementioned two

significant direct paths. Table 3 shows that this model fits better to the data than the Hypothesised Model and, thus, it was considered our final model.

H1 concerned the mediating role of a) attitudes and b) control in the relationship between norms and investment intentions. Figure 2 shows that attitudes ( $\beta=.15, p<.05$ ), norms ( $\beta=.45, p<.001$ ) and control ( $\beta=.19, p<.01$ ) related significantly to investment intentions, while norms linked significantly to attitudes ( $\beta=.75, p<.001$ ) and control ( $\beta=.68, p<.001$ ). Results of bootstrap analyses suggested that attitudes and control partially mediate the norms-investment intentions relationship (CI: LB=.111, UB=.396,  $p=.001$ ). Therefore, H1 was supported in the total sample.

H2 proposed that human capital relates to investment intentions via attitudes (a), norms (b) and control (c). Figure 2 shows that human capital related directly to investment intentions ( $\beta=.11, p<.05$ ) and norms ( $\beta=.38, p<.011$ ). Bootstrap analyses further showed that norms partially mediated the relationship between human capital and investment intentions (CI: LB=.167, UB=.345,  $p=.001$ ). Thus, H2b was accepted. Based on the insignificant human capital-attitudes relationship ( $\beta=.02, p=.74$ ) and the human capital-control ( $\beta= -.03, p=.57$ ) link, H2 (a and c) was rejected.

According to H3 social capital was expected to relate to investment intention attitudes (a), norms (b) and control (c). Results indicated that social capital was neither directly linked to investment intentions ( $\beta=.04, p=.11$ ), to personal attitudes ( $\beta=.04, p=.37$ ) nor to norms ( $\beta=.01, p=.89$ ). Therefore, H3 (a and b) was rejected. The fact that

social capital was significantly related to control leads us to postulate that a possible full mediation effect in the relationship between social capital and investment intentions is present. Bootstrap analyses did support this effect (CI: LB=.007, UB=.084,  $p=.05$ ). Based on these results H3c was accepted.

According to H4, financial capital relates to investment intention attitudes (a), norms (b) and control (c). Figure 2 shows that financial capital related negatively and significantly with investment intentions ( $\beta = -.13$ ,  $p < .01$ ) and norms ( $\beta = -.20$ ,  $p < .01$ ). Given that norms and investment intentions were significantly linked, norms were found to partially mediate the relationship between financial capital and investment intentions (CI: LB= -.225, UB= -.055,  $p=.01$ ). Thus, H4b was accepted. However, H4 a) and c) was rejected as the financial capital-attitudes link ( $\beta=.04$ ,  $p=.43$ ) and financial capital-control ( $\beta=.06$ ,  $p=.26$ ) relationship were insignificant.

The final model proposes a series of indirect relationships from the three forms of capital to investment intentions via norms and, consequently, attitudes and control. These indirect paths have been tested. Post-hoc analyses showed that the insignificant human capital-attitudes and human capital-control link, along with the significant norms-attitudes and norms-control relationship respectively (see Figure 2), indicate an indirect path from human capital to attitudes and control via norms. Results of bootstrap analyses supported these indirect effects (CI: LB=.189, UB=.386,  $p=.001$ ; CI: LB=.169, UB=.348,  $p=.001$ ). The above point to a sequential indirect effect from human capital to

investment intentions via first norms and then attitudes and control (CI: LB=.167, UB=.345,  $p=.001$ ). The insignificant financial capital-attitudes and financial capital-control link, along with the significant norms-attitudes and norms-control relationship respectively (see Figure 2), indicated an indirect path from financial capital to attitudes and control via norms. Results of bootstrap analyses supported these indirect negative effects (CI: LB= -.252, UB= -.063,  $p=.01$ ; CI: LB= -.228, UB= -.053,  $p=.01$ ). The above lead us to conclude that a sequential indirect effect is present. Results of bootstrap analyses confirmed that the relationship between financial capital and investment intentions was partially mediated by a) norms and attitudes and b) norms and control (CI: LB= -.225, UB= -.055,  $p=.01$ ).

*PLEASE INSERT FIGURE 2 HERE*

Results of the multigroup path analyses (see Table 3) showed that the Hypothesised Model (HM) where all parameters were set to be free across the two groups fits well to the data, with all fit indices meeting the criteria, except the RMSEA, which was  $>.08$ . The HM was compared to Alternative Model 1 with free parameters across groups, which was similar to the HM, but it also included direct paths from human, social and financial capital to investment intentions. An investigation of the parameter estimates of this fully-saturated model indicated that there was a significant

path from human capital to investment intentions in the English Group ( $\gamma=.16, p<.05$ ), from social capital to investment intentions in the Greek Group ( $\gamma=.17, p<.05$ ), and from financial capital to investment intentions in the Greek Group ( $\gamma= -.19, p<.01$ ). In light of these findings, we tested Alternative Free Model 2, which was identical to the HM but also included the aforementioned three significant direct paths. Table 3 shows that this model fits better to the data than the HM and, thus, this was considered to be our final model to investigate H5 and H6.

To test model invariance across the two groups, we compared Alternative Free Model 2, where all paths were set to be free across the two groups, with Alternative Constrained Model 2, where all factor paths were constrained to be equal across the two groups. The chi-square difference test showed that constraining paths to be equal across the two groups led to a statistically significant increase in the chi-square value (see Table 3), suggesting that the hypothesised model is not the same across the two study groups. Figure 3 presents the significant and non-significant standardised estimates of the Final Alternative Free Model 2 in the English and Greek samples separately.

*PLEASE INSERT FIGURE 3 HERE*

Figure 3 shows that attitudes related positively to investment intentions for the Greek group ( $\beta=.47, p<.001$ ). However, this relationship was found to be negative and

significant for the English group ( $\beta = -.26, p < .01$ ). This unexpected negative relationship should be attributed to a suppressor effect and should not be discussed as a true finding, because Table 2 suggests that attitudes correlate positively to intentions in the English group. The positive link between norms and investment intentions was present only in the English group ( $\beta = .76, p < .001$ ), but not in the Greek group ( $\beta = -.04, p = .71$ ). Also, the positive relationship between control and investment intentions was present in the English group ( $\beta = .19, p = .07$ ), but not in the Greek group ( $\beta = .29, p < .001$ ).

Despite the fact that in the English group the norms-attitudes ( $\beta = .70, p < .001$ ) and norms-control ( $\beta = .65, p < .001$ ) relationships were positive and significant, the insignificant paths from control and attitudes to investment intentions rejected H1 for this group. Conversely, analyses concerning the Greek group suggested that attitudes and control fully mediated the norms-investment intentions relationship (CI: LB=.252, UB=.648,  $p = .00$ ). Thus, H1 was supported in the Greek group.

H2 to H4 concerned the indirect effects of human, social and financial capital on investment intentions via attitudes (a), norms (b) and control (c). In the English group, the insignificant paths from human capital to attitudes ( $\gamma = -.02, p = .78$ ), norms ( $\gamma = .17, p = .08$ ), control ( $\gamma = -.06, p = .42$ ), from social capital to attitudes ( $\gamma = .13, p = .10$ ) and control ( $\gamma = .18, p = .14$ ) and from financial capital to attitude ( $\gamma = .02, p = .77$ ), norms ( $\gamma = .09, p = .33$ ), and control ( $\gamma = .04, p = .56$ ) resulted in rejecting H2, H3 (a and c) and H4. Figure 3 postulates a full mediation effect of norms in the relationship between social

capital and investment intentions, which was supported by the bootstrap analyses (CI: LB=.056, UB=.349,  $p<.01$ ). Therefore, H3b was accepted. Also, results showed that the direct relationship between human capital and investment intentions was significant ( $\gamma=.16$ ,  $p<.05$ ). Post-hoc analyses regarding sequential mediation indicated that social capital had a significant and positive indirect effect on attitudes (CI: LB=.033, UB=.317,  $p<.05$ ) and control (CI: LB=.034, UB=.303,  $p<.05$ ) via norms. Despite the significant and positive indirect effect of social capital on investment intentions (CI: LB=.056, UB=.349,  $p<.05$ ), the insignificant effect of attitudes and control on investment intentions rejects these sequential mediations.

As far as the Greek group is concerned, results showed insignificant paths from human capital to attitude ( $\gamma=.03$ ,  $p=.73$ ) and control ( $\gamma= -.01$ ,  $p=.93$ ), from social capital to attitude ( $\gamma=.03$ ,  $p=.73$ ) and norms ( $\gamma=.12$ ,  $p=.19$ ), from financial capital to attitude ( $\gamma=.10$ ,  $p=.24$ ) and control ( $\gamma=.05$ ,  $p=.59$ ). Based on these results H2 (a and c), H3 (a and b) and H4 (a and c) were rejected. Despite the significant link between human capital and subjective norms ( $\beta=.26$ ,  $p< .01$ ) on the one hand and financial capital and subjective norms ( $\beta= -.30$ ,  $p< .01$ ) on the other, the insignificant path from norms to intentions indicated that H2b and 4b were also rejected. However, Figure 3 postulates a significant direct link between social capital and investment intentions ( $\beta= .16$ ,  $p< .05$ ) and a partial mediation effect of perceived behavioural control in the aforementioned

relationship. This mediating effect was found to be significant (CI: LB= .032, UB= .239,  $p = .009$ ). Thus, H3c was confirmed.

Post-hoc analyses suggested that human capital had a significant and positive indirect effect on attitudes (CI: LB=.032, UB=.307,  $p < .05$ ) and control (CI: LB=.025, UB=.257,  $p < .05$ ) via norms. Moreover, human capital had a significant and positive indirect effect on investment intentions via norms and, consequently, via attitudes and control (CI: LB=.019, UB=.223,  $p < .05$ ). Finally, results showed that financial capital had a significant and negative indirect effect on attitudes (CI: LB= -.322, UB= -.041,  $p < .01$ ) and control (CI: LB= -.271, UB= -.033,  $p < .01$ ) via norms. What is more, financial capital had a significant and negative indirect effect on investment intentions via norms and, consequently, via attitudes and control (CI: LB= -.215, UB= -.029,  $p < .01$ ).

H5 to H8 were tested with the critical ratios for difference tests. H5 suggested that the relationship between attitudes and investment intentions (a) and control and investment intentions (b) would be stronger for the English than the Greeks. The critical ratios for differences between parameters indicated that the z-values for the attitude-investment intentions ( $z=5.949$ ) were significant and insignificant for the control-investment intentions ( $z=1.738$ ). The attitude-investment intentions and control-investment intentions link was positive and significant only in the Greek group, thus rejecting H5.



As far as H6 is concerned, it was expected that the relationship between norms and investment intentions would be stronger among individuals from a collectivistic than an individualistic cultural background. Results showed that z-values for norms-investment intentions ( $z = -4.670$ ) were significant and that norms related positively and significantly to investment intentions only for the English group. Thus H6 was rejected. Interestingly, the z-values for the norms-control relationship was significant ( $z = -2.161$ ) and the link was stronger in the English group.

Figure 3 shows human capital – attitudes and human capital – control links were insignificant in both groups. The relationship between human capital-norms was present only in the Greek group. The critical ratios for differences between parameters indicated that the z-value for this link were insignificant ( $z = .754$ ). Therefore, H7 was rejected. The link between social capital and attitudes was not present in both groups. Despite the fact that the social capital-norms relationship was present only in the Greek group (please see Figure 3), the z value ( $z = -1.478$ ) indicates that there is no significant difference between the two groups. This was also the case regarding the link between social capital and control ( $z = .754$ ). According to Figure 3 the financial capital - attitudes relationship and the financial capital - control link was not present in both groups. The critical ratios for differences between parameters indicated that the z-value for financial capital-norms ( $z = -3.148$ ) was significant. These results suggest that the financial

capital-norms relationship was present only for the Greek group. H8 was partially confirmed.

Based on a post hoc analysis, human capital was found to relate positively to investment intentions only for the English group. However, the critical ratios for differences suggested that the strength of this relationship was not significantly different across groups ( $z = -.864$ ). Social capital related positively and significantly to investment intentions only in the Greek group. However, the critical ratios for differences suggested that the strength of this relationship was not significantly different across groups ( $z = .686$ ). Results showed that z-values for financial capital-investment intentions ( $z = -2.039$ ) were significant. Even though financial capital related to investment intentions only in the Greek group, this effect was negative.

*PLEASE INSERT TABLE 3 HERE*

In summary, attitudes – norms – control was positively related to investment intentions while the relationship between norms and investment intentions was mediated by attitudes and control in the total sample. Human and financial capital was directly linked to investment intentions, but the relationship was positive for the former and negative for the later. However, human and financial capital was also indirectly

linked to investment intentions via norms. A serial mediation in the human capital - investment intentions and financial capital - investment intentions relationship either via norms and attitudes or norms and control was present. Social capital was only indirectly related to investment intentions via control. When it comes to the English group, norms were only directly linked to investment intentions while the direct or indirect links between attitudes/norms and investment intentions were not present. When it comes to capital, only human capital was directly related to investment intentions. The relationship between social capital and investment intentions was fully mediated by subjective norms while the financial capital – investment intentions link was absent. In the Greek sample, results were more in line with the results of the total sample. In particular, attitude and control were related to investment intentions, while the norms – investment intention relationship was fully mediated by attitude and control. Human capital was only indirectly related to investment intentions first via norms and consequently attitudes. The link between social capital and investment intentions was partially mediated via control. We also have evidence regarding a partial mediation in the negative relationship between financial capital and investment intentions, indicating that financial capital links to norms which are related either to attitude and control, which both in turn are linked to investment intentions. Table 4 summarises the significant direct and indirect effects in the three sample groups.

*PLEASE INSERT TABLE 4 HERE*

## **5 Discussion**

With this study, we aimed to examine the role of human, social and financial capital for young individuals' intentions to invest them in a new or existing venture. To this end, we tested the mediating role of attitudes, norms, and control in this relationship. We also investigated whether the proposed model holds equally for culturally distinct groups (i.e. English vs. Greek cultural backgrounds). The results generally confirmed our proposed model, which incorporated the core assumptions of TPB (Ajzen, 1991) and the EIM (Bird, 1988) in the total sample. Specifically, our findings confirm the more recent previous research in the entrepreneurial arena regarding the attitude-intention, norms-intention, control-intention link (Iakovleva and Solesvik, 2014, Karimi et al., 2016, Kautonen et al., 2015, Roy et al., in press, Sahut et al., 2015, Zapkau et al., 2015) but also the mediating role of norms in the attitude-intentions and control-intention relationship (Entrialgo and Iglesias, 2016). Our findings showed that all forms of capital play a crucial role in the formation of young individuals' investment intentions. However, although investing human and social capital relates positively to investment intentions, investing financial capital was found to relate negatively. Taking into account the mediating effect of attitudes and control in the norms-intention relationship, one may argue that individuals who possess a set of specific skills (i.e. human capital), who have acquired high levels of social capital or who have a

considerable amount of financial resources are likely to generate positive norms in their social environment because having the capital required to invest in a new venture may make others think that someone has what it takes to engage in investments. In turn, these favourable norms are likely to create positive attitudes and high perceived control regarding investments (Prislin and Wood, 2005, Wood and Bandura, 1989), which will relate positively to investment intentions (Ajzen, 1991). In this regard, our results suggested that high levels of human capital enhance investment intentions because they lead to more favourable social norms, which, in turn, create positive personal attitudes and high control over the investment activities. High levels of social capital relate positively to investment intentions because they enhance individuals' control over the investment activities. The negative link between financial capital and investment intentions is explained by the fact that investing financial capital is less accepted by a person's social circle since it creates negative norms. In other words, it is implied that participants' social circles do not perceive the investment of financial capital as a smart move, thus reducing their investment intentions.

The results of multigroup analyses indicated that the psychological processes through which different forms of capital relate to investment intentions vary substantially across the two cultural groups. The highlighted difference between individualistic and collectivistic cultures has to do with the specific forms of capital that individuals choose to invest in order to participate in venture creation or growth

processes, as well as with the psychological mediators that translate these forms of capital into intentions to invest. These cultural differences are discussed in more depth in what follows.

### **5.1 Investment Intentions across Cultural Backgrounds**

Our results extend previous research suggesting differences in the relationships proposed by the TPB across diverse cultural backgrounds (Triandis, 1995, Markus and Kitayama, 1991). In addition to the cultural differences regarding the role of norms, attitudes and control on investment intentions, we also found important cultural differences with regard to the importance of the different types of capital.

**In the English group**, the core TPB assumptions have been confirmed only regarding the norms-investment intentions relationship. Young English individuals' investment intentions were positively and directly associated with the perceptions of their close environment. This finding contrasts with those of other scholars reporting a non-significant relationship between norms and entrepreneurial intentions among university students in individualistic countries like Belgium, Canada, Finland, France, Germany, Poland and USA (Boissin et al., 2009, Kaltenecker et al., 2015, Krueger et al., 2000, Moriano et al., 2012, St-Jean et al., 2014, Varamäki et al., 2015) and among managing directors/academic scientists/entrepreneurs in Germany and Italy (Fini et al., 2010, Goethner et al., 2012, Sommer and Haug, 2011). Contrary to the assumption that

social norms are less influential for someone's intentions in individualistic contexts, our findings indicate that social norms play a role in forming the intentions of young people who come from an individualistic background. Perhaps this unexpected finding may be attributed to the fact that young English people do not only share high individualistic but also high masculine values (and higher than those from a Greek cultural background). This suggests that they are highly antagonistic, competitive and achievement-oriented (Hofstede, 2001). Individuals who share such values are more likely to take into account their close environment in order to determine their competitive advantage.

Self-confidence regarding the ability to control the investment did not lead to the formation of stronger investment intentions for young English individuals. Although this unexpected finding is in line with previous research among University students in France, Germany, Norway, Sweden and USA (Boissin et al., 2009, Engle et al., 2010, Kaltenecker et al., 2015, Kolvereid and Isaksen, 2006), it contradicts the vast majority of studies. These studies showed a significant relationship between control and entrepreneurial intentions in individualistic cultures not exclusively among University students in Belgium/France , Canada , Finland , Germany, Netherlands, Poland and USA (e.g. Boissin et al., 2009, Moriano et al., 2012, Obschonka et al., 2012, Sahut et al., 2015, St-Jean et al., 2014, Varamäki et al., 2015, Zhang et al., 2015) but also among individuals from the adult population in Austria and Finland (Kautonen et al., 2015), the

seniors age group in France (Sahut et al., 2015) and scientists in Germany (Obschonka et al., 2015). The insignificant link between control and investment intentions was unexpected as individuals from an individualistic background are characterised by their ability to control the environment, identify their strengths and weaknesses and accordingly engage in specific behaviours (Oyserman et al., 2002). A possible explanation for this insignificant link may relate to the fact that diversification may occur even within the same cultural background. In this sense, individuals with individualistic cultural values may differentiate from the group and adopt a more self-construal approach regarding their beliefs. This may be related to false assumptions regarding the cultural homogeneity that ignores within-group cultural differences (Fiske, 2002).

For individuals with an English cultural background, investment intentions are associated directly with their human capital and indirectly with their social capital. Our findings regarding the role of human capital in the formation of investment intentions are in line with previous research supporting the direct, positive relationship between skills and entrepreneurial intentions in individualistic cultures such as Belgium and Finland (de Clercq and Arenius, 2006). However, when it comes to social capital, this study contradicts previous research that indicates a direct link between personal networks and the formation of entrepreneurial intentions in individualistic cultures (Davidsson and Honig, 2003, de Clercq and Arenius, 2006). The psychological process



that leads young English individuals who invest social capital towards the formation of investment intentions is mediated by norms. In this regard, the available information that can be gathered through close or distant personal networks can be transferred to the venture constructively. The decision to invest social capital is fully supported by the social environment, which, in turn, fosters investment intentions.

Finally, the insignificant relationship between financial capital and investment intentions in the English group contradicts previous research indicating that higher levels of financial resources boost the decision to become an entrepreneur in individualist cultures (Evans and Jovanovic, 1989). This unexpected finding may be attributed to the fact that we have measured household income instead of personal income, which is a more individualistic indicator. Also, investing social capital instead of financial capital is considered to be a less risky decision that may leave a fruitful amount of time to enjoy non-professional life and engage in leisure activities with lower stress levels. Individuals from indulgent individualistic cultures, such as the UK, approach life in an optimistic way and place higher importance on having the opportunity not only to gain money but also to have spare time to spend it (Hofstede, 1980, Hofstede, 2001, Hofstede, 2017b).

**In the Greek group,** individuals' investment intentions are formed based on their positive attitudes regarding their engagement in investment activities, which is in line with previous research not only in Greece (for employed/unemployed individuals see

Palamida et al., in press; for University students see Zampetakis et al., 2016) but also in other collectivistic societies (India, Iran and Senegal) among university students (García-Rodríguez et al., 2015, Karimi et al., in press, Roy et al., in press) and academics (Spain; Alonso-Galicia et al., 2015). The vast majority of previous studies have reported a significant relationship (e.g. Aloulou, 2016, Díaz-Casero et al., 2012, Iakovleva and Solesvik, 2014, Karimi et al., in press, Liñán et al., 2011, Roy et al., in press Palamida et al., in press) between norms and entrepreneurial intentions in a collectivistic background (Greece, India, Iran, Russia/Ukraine and Saudi Arabia), basically based on student samples. In contrast, our study provides evidence that young Greeks' investment intentions are not directly linked to their close social ties, but are mainly attributed to their positive attitudes regarding their investment activities and their confidence in their abilities to invest. The insignificant relationship between norms and investment intentions should not be considered evidence inconsistent with the core assumptions of the TPB (Ajzen and Fishbein, 2005). This could be explained by our findings regarding the mediating role of attitudes and control on the relationship between norms and investment intentions, which is in line with previous research in the entrepreneurial domain (Alonso-Galicia et al., 2015, Entrialgo and Iglesias, 2016, Liñán, 2008, Liñán and Chen, 2009, Liñán et al., 2011, Liñán et al., 2013, Palamida et al., in press). This full mediation suggests that supportive social circles regarding Greeks' decisions to engage in investment activities create positive attitudes regarding

the outcomes that can be gained through the involvement in investment activities, and increase the level of confidence in engaging in investment activities, which in turn lead to the formation of higher investment intentions. Considering that individuals with collectivistic values make decisions and form behaviours by taking into consideration the perspective of their environment (Oyserman et al., 2002) it was not surprising that norms would relate to investment intentions indirectly. This finding is important because it suggests that in collectivistic cultures the effect of norms on forming intentions is particularly significant because it also determines individuals' attitudes and control. The relationship between control and intention was significant. This is in line with previous research in Greece among employed/unemployed individuals (Palamida et al., in press) and University students (Zampetakis et al., 2016). The relationship has also been confirmed among University students in other collectivistic cultures like Russia/Ukraine, Saudi Arabia and Spain (Aloulou, 2016, Entrialgo and Iglesias, 2016, García-Rodríguez et al., 2015, Iakovleva and Solesvik, 2014).

Young Greek individuals' human capital was found to relate indirectly with investment intentions via first norms and then attitudes and control. This extends Liñán's (2008) findings showing that business students with entrepreneurial skills in Spain form positive perceptions regarding venture creation, and consider that their close social circles are supportive. In terms of the social capital, this study supports and extends previous findings postulating that social capital is directly linked to investment

intentions in Greece among employed/unemployed individuals (Palamida et al., 2015) and that higher levels of social capital increase the likelihood of becoming an entrepreneur in Turkey (Cetindamar et al., 2011). In order to do so, we provide evidence that the proposed relationship is partially mediated by the role of control. Results show that Greeks' personal networks and the benefits that these networks may bring to the venture, in terms of information, do not only have a direct but also an indirect effect on the formation of investment intentions. In this sense, higher levels of bonding and bridging social capital make individuals feel more capable of contributing to the venture, which consequently creates stronger investment intentions.

The availability of financial capital for young Greeks was found to be associated (directly and indirectly) with investment intentions in a negative way. Those who possess financial capital think that their close ties are less likely to approve their decision to invest their financial resources, thus lowering their investment intentions. This can be explained by the fact that individuals from diverse cultural backgrounds have different uncertainty avoidance mechanisms (Hofstede, 1980), which may affect their decision about taking specific risks or not. Greeks score 100% in uncertainty avoidance (Hofstede, 2001), which means that they do not want to make investments that are extremely risky (i.e. investing money).

## **5.2 Theoretical Contribution**

The contribution of this paper is fourfold. Firstly, we centred our attention on effectuation processes and conceptualised entrepreneurship from an investor's perspective. In this regard, the focus turned to “potential investors” by examining the link between human, social and financial capital and investment intentions. Understanding potential investment intentions is crucial, especially when the focus turns to young individuals that may face liquidity constraints due to their young age and early career stage. In resource-acquisition strategies required for venture creation and growth, investment activities correspond to larger networks with advanced status and credibility and to better combinations of skills, which may lead to more feasible funding options (Florin et al., 2003, Gimmon, 2008, Zacharakis and Shepherd, 2005, Chandler and Hanks, 1998, Shane and Cable, 1999). Our findings are important because they suggest that investing human and social capital is more important for investment intentions than financial capital. Bringing skills in-house under non-salary based conditions in order to fill in the skills gap (human capital) and increasing the availability of information and resources through an extended network (social capital) may decrease start-up costs and result in shared risks, which boosts venture creation and enhances the chances of survival (Fonseca et al., 2001, Westlund and Bolton, 2003, Papagiannidis and Li, 2005).

Secondly, scholars (Arenius and Minniti, 2005, Cetindamar et al., 2011, Davidsson and Honig, 2003, de Clercq and Arenius, 2006, Evans and Jovanovic, 1989,

Kim et al., 2006, Liñán and Chen, 2009, Robinson and Sexton, 1994) have examined the relationship between diverse forms of capital and entrepreneurial intentions without considering the responsible mediating mechanisms. The added value of this paper to the literature stems from the fact that it incorporates specific psychological mediators that may explain the link between human, social, financial capital and investment intentions.

Thirdly, we used specific measurements in order to determine the link between human-social capital and entrepreneurship. We consider the most valuable components of human capital (business related skills based on explicit and tacit knowledge; Baum et al., 2001, Becker, 1993, Bouwman and Hulsink, 2002, Cooper, 1973, Freel, 1999, Gimmon and Levie, 2010, Haynes, 2003, Locke, 2000, Man et al., 2002, Mitchelmore and Rowley, 2010) in contrast to previous entrepreneurial research that has operationalised it in a broader form relating to individuals' educational level or years in education or work experience ( i.e. Robinson and Sexton, 1994, Arenius and Minniti, 2005, Cetindamar et al., 2011, Davidsson and Honig, 2003, Kim et al., 2006, Liñán and Chen, 2009). In the same vein, previous research on entrepreneurship has determined the link between social capital and entrepreneurship by approaching the construct from a family perspective (Cetindamar et al., 2011) such as the exposure to knowledge via networks (de Clercq and Arenius, 2006), or the diversification between bonding and bridging social capital (Davidsson and Honig, 2003). The limitation of these previous approaches, which we have overcome in this study, is that individuals with broadly

established formal and informal relationships may not always extract benefits from these interactions, meaning that the size of personal networks alone has little value in determining the role of social capital in individuals' decisions to engage in entrepreneurship related activities.

Finally, the importance of understanding entrepreneurial intentionality while accounting for the role of culture is significant (Hayton et al., 2002). Based on past research suggesting that the most valid, reliable and representative key aspect of culture that determines behaviour is the collectivistic-individualistic dimension (Oyserman et al., 2002, Triandis and Suh, 2002, Schimmack et al., 2005), we studied the effects of different forms of capital on investment intentions by differentiating between individuals' collectivistic and individualistic cultural backgrounds. The findings that processes are not invariant across cultures suggest that in addition to personal characteristics, cultural characteristics should also be incorporated in models that explain investment intentions.

### **5.3 Practical Contributions**

Securing financial capital and attracting investment is often a major challenge in its own right, which can distract entrepreneurs from channelling all their energy and focus on developing their ventures. Put differently, the opportunity and transaction costs involved in this process can end up being significant, potentially rendering such an

option a prohibitive one. Recognising that alternative options exist can open up ways for recruiting and extending the entrepreneur's team. For instance, instead of having to secure financial capital in order to then invest in recruitment, entrepreneurs could explore compensating new staff in alternative ways from the outset, saving both time and effort. Pragmatically, a hybrid approach could be adopted. On the one hand sufficient financial remuneration can be offered to cover the minimum requirements one may have. On the other, being more committed to a project, e.g. via step-wise sharing of revenues and shares, could help with lock-in and attract motivated and enthused-with-the-project talent. Achieving the right balance and positioning such a proposition will need to take into consideration ingredients such as those featuring in our studies. The availability of human capital, how social capital is developed and put into action, cultural aspects can affect individual investment intentions. Appropriate mechanisms would also need to be established in order to promote and facilitate the recruitment process. To this end, policy interventions could focus both on establishing organisations based on entrepreneurial networks, and on investing in training courses in such a way that young individuals may have the opportunity to increase their access to social and human capital. In the same vein, schemes that encourage investments by promoting the positive outcomes of engaging in investment activities (attitudes), recognising the value of close ties' support in the investment process (norms) and build on self-confidence (control) are essential in creating an investment-friendly climate.



Most importantly, policy interventions in promoting investments should reflect diverse cultural backgrounds. While some approaches may focus on collectivistic cultures, some others may target individualistic ones. In this sense, the role of different forms of capital and diverse psychological factors should not be underestimated among individuals with individualistic versus collectivistic backgrounds. Considering that individuals are willing to invest human and social capital in a venture that they truly believe in and that the difference between individualistic and collectivistic backgrounds lies in the psychological process that the availability of capital relates to the formation of investment intentions, it is suggested that interventions should be prioritised based on cross-cultural distinctions that focus on promoting psychological aspects related to investments, particularly in multicultural contexts.

## **6 Conclusion**

This paper has contributed to our better understanding of why and when alternative investors may engage in entrepreneurial creation and growth by investing not exclusively financial resources and whether their decision is differentiated by their cultural backgrounds. We have provided evidence that individuals from both cultural backgrounds are willing to invest their human and social capital but they do so by following a different psychological process. This is of great interest as it explains not only the kind of resources that individuals' intend to invest in a venture, but also the

way that other psychological variables play in the process. From one perspective this may explain why previous research has not indicated the aforementioned links and from another perspective this may highlight which psychological aspects need to be strengthened in order for venture creation and growth to occur in diverse cultures. When it comes to financial capital this is considered as an investment option only for individuals from a collectivistic cultural background. Interestingly, our findings lead us to suggest that individuals will invest lower levels of capital in order to engage in entrepreneurial activities. Overall, this paper goes beyond the strictly narrow thoughts of creating and growing ventures only when high levels of financial capital are present by pointing out the role of intangible resources in the entrepreneurial process.

## **7 Limitations and Future Research**

The limitations of this study need to be acknowledged. The cross-sectional nature of the study excludes conclusions about causality, while the use of a self-reported questionnaire raises concerns regarding common method variance (Lindell and Whitney, 2001, Wunsch et al., 2010). Also, although cross-sectional data limit the test of sequential mediation, our results provided some interesting insights regarding the sequence of effects from the different forms of social capital to investment intentions via social norms and then through personal attitudes and perceived behavioural control.

Although these relationships are theoretically justified, future longitudinal studies should further confirm the suggested sequence of effects.

Another limitation of this study is the relatively small sample size, which does not make it possible to generalise our conclusions to the whole population. However, the focus of this investigation was turned to the underlying psychological processes that explain the link between capital and investment intentions and not on mean differences between two populations. Nevertheless, future research could examine the same relationships between more compatible groups and make comparisons more feasible. This would imply a stronger comparison across groups based on similar background characteristics that only differ in terms of their cultural background.

Future studies could undertake the same research across diverse multicultural countries, such as the USA, and highlight possible differences or similarities among individuals with a collectivistic background who live in the USA and show whether cultural values that pre-exist and relate to ethnicity are influenced or not by social values from the “host country”. In this regard, a self-construal measurement of individuals’ dependent or independent self would enable future studies to mark differences in the same ethnic groups.

Future research is needed in order to replicate our findings in the broader context of entrepreneurial intentions by concentrating on opportunity identification, evaluation and the exploitation of entrepreneurial ideas. Considering that having the intention to

act entrepreneurially by investing diverse forms of capital does not immediately lead to investment actions (Ajzen and Fishbein, 2005), future studies could further investigate the link between investment intentions and actual behaviour.

## References

- AJZEN, I. 1991. The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50, 179-211.
- AJZEN, I. 2001. Nature and operation of attitudes. *Annual Review of Psychology*, 52, 27-58.
- AJZEN, I. 2002. Perceived behavioral control, self-Efficacy, locus of control, and the theory of planned behavior. *Journal of Applied Social Psychology*, 32, 665-683.
- AJZEN, I. & FISHBEIN, M. 2005. The influence of attitudes on behavior. In: D.ALBARRACIN, JOHNSON, B. & ZANNA, M. (eds.) *The handbook of attitudes*. Mahwah: Lawrence Erlbaum Associates.
- ALDRICH, H. E. & CLIFF, J. E. 2003. The pervasive effects of family on entrepreneurship: Toward a family embeddedness perspective. *Journal of Business Venturing*, 18, 573-596.
- ALONSO-GALICIA, P. E., FERNÁNDEZ-PÉREZ, V., RODRÍGUEZ-ARIZA, L. & FUENTES-FUENTES, M. D. M. 2015. Entrepreneurial cognitions in academia: Exploring gender differences. *Journal of Managerial Psychology*, 30, 630-644.

- ALLOULOU, W. J. 2016. Predicting entrepreneurial intentions of final year Saudi university business students by applying the theory of planned behavior. *Journal of Small Business and Enterprise Development*, 23, 1142-1164.
- ARENIUS, P. & MINNITI, M. 2005. Perceptual Variables and Nascent Entrepreneurship. *Small Business Economics*, 24, 233–247.
- AVSEC, A. 2003. Masculinity and femininity personality traits and self-construal. *Studia Psychologica*, 45, 151-159.
- BAKER, T. & NELSON, R. E. 2005. Creating Something from Nothing: Resource Construction through Entrepreneurial Bricolage. *Administrative Science Quarterly*, 50, 329-366.
- BANDURA, A. 1977. Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84, 191-215.
- BANDURA, A. 1997. *Self-efficacy: The exercise of control*, New York, W.H. Freeman.
- BAUM, J. R., LOCKE, E. A. & SMITH, K. G. 2001. A multidimensional model of venture growth. *Academy of Management Journal*, 44, 292-303.
- BECKER, G. S. 1993. *Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education*, Chicago, The University of Chicago Press.
- BIRD, B. 1988. Implementing entrepreneurial ideas: The case for intention. *Academy of Management Review*, 13, 442-453.

- BOISSIN, J.-P., BRANCHET, B., EMIN, S. & HERBERT, J. I. 2009. Students and Entrepreneurship: A Comparative Study of France and the United States. *Journal of Small Business & Entrepreneurship*, 22, 101-122.
- BOUWMAN, H. & HULSINK, W. 2002. A dynamic model of Cyber-entrepreneurship and cluster formation: Applications in the United States and in the Low Countries. *Telematics and Informatics*, 19, 291-313.
- CETINDAMAR, D., GUPTA, V. K., KARADENIZ, E. E. & EGRICAN, N. 2011. What the numbers tell: The impact of human, family and financial capital on women and men's entry into entrepreneurship in Turkey. *Entrepreneurship & Regional Development*, 24, 29-51.
- CHA, E. S., KIM, K. H. & ERLEN, J. A. 2007. Translation of scales in cross-cultural research: Issues and techniques. *Journal of Advanced Nursing*, 58, 386-395.
- CHANDLER, G. N. & HANKS, S. H. 1998. An examination of the substitutability of founders human and financial capital in emerging business ventures. *Journal of Business Venturing*, 13, 353-369.
- CHASTON, I. & SADLER-SMITH, E. 2012. Entrepreneurial Cognition, Entrepreneurial Orientation and Firm Capability in the Creative Industries. *British Journal of Management*, 23, 415-432.

- CHEN, X., STANTON, B., GONG, J., FANG, X. & LI, X. 2009. Personal Social Capital Scale: An instrument for health and behavioral research. *Health Education Research*, 24, 306-317.
- COLEMAN, J. S. 1990. *Foundations of social theory*, Cambridge, MA, Harvard University Press.
- COOPER, A. C. 1973. Technical entrepreneurship: what do we know? *R&D Management*, 3, 59-64.
- DAVIDSSON, P. & HONIG, B. 2003. The role of social and human capital among nascent entrepreneurs. *Journal of Business Venturing*, 18, 301-331.
- DE CLERCQ, D. & ARENIUS, P. 2006. The Role of Knowledge in Business Start-up Activity. *International Small Business Journal*, 24, 339-358.
- DÍAZ-CASERO, J. C., HERNÁNDEZ-MOGOLLÓN, R. & ROLDÁN, J. L. 2012. A structural model of the antecedents to entrepreneurial capacity. *International Small Business Journal*, 30, 850-872.
- ENGLE, R. L., DIMITRIADI, N., GAVIDIA, J. V., SCHLAEGEL, C., DELANOE, S., ALVARADO, I., HE, X., BUAME, S. & WOLFF, B. 2010. Entrepreneurial intent: A twelve-country evaluation of Ajzen's model of planned behavior. *International Journal of Entrepreneurial Behaviour and Research*, 16, 36-58.

- ENTRIALGO, M. & IGLESIAS, V. 2016. The moderating role of entrepreneurship education on the antecedents of entrepreneurial intention. *International Entrepreneurship and Management Journal*, 12, 1209-1232.
- EVANS, D. S. & JOVANOVIC, B. 1989. An Estimated Model of Entrepreneurial Choice under Liquidity Constraints. *Journal of Political Economy*, 97, 808-827.
- FINI, R., GRIMALDI, R., MARZOCCHI, G. L. & SOBRERO, M. 2010. The determinants of corporate entrepreneurial intention within small and newly established firms. *Entrepreneurship Theory and Practice*, 36, 387-414.
- FISKE, A. P. 2002. Using individualism and collectivism to compare cultures - A critique of the validity and measurement of the constructs. *Psychological Bulletin*, 128, 78-88.
- FLORIN, J., LUBATKIN, M. & SCHULZE, W. 2003. A social capital model of high-growth ventures. *Academy of Management Journal*, 46, 374-384.
- FONSECA, R., LOPEZ-GARCIA, P. & PISSARIDES, C. A. 2001. Entrepreneurship, start-up costs and employment. *European Economic Review*, 45, 692-705.
- FREEL, M. S. 1999. Where are the skills gaps in innovative small firms? *International Journal of Entrepreneurial Behaviour & Research*, 5, 144-154.
- GARCÍA-RODRÍGUEZ, F. J., GIL-SOTO, E., RUIZ-ROSA, I. & SENE, P. M. 2015. Entrepreneurial intentions in diverse development contexts: a cross-cultural



- comparison between Senegal and Spain. *International Entrepreneurship and Management Journal*, 11, 511-527.
- GIMMON, E. 2008. Entrepreneurial team-starts and teamwork: Taking the investors' perspective. *Team Performance Management*, 14, 327-339.
- GIMMON, E. & LEVIE, J. 2010. Founder's human capital, external investment, and the survival of new high-technology ventures. *Research Policy*, 39, 1214-1226.
- GIST, M. E. & MITCHELL, T. B. 1992. Self-efficacy: A theoretical analysis of its determinants and malleability. *Academy of Management Review*, 17, 183-211.
- GOETHNER, M., OBSCHONKA, M., SILBEREISEN, R. K. & CANTNER, U. 2012. Scientists' transition to academic entrepreneurship: Economic and psychological determinants. *Journal of Economic Psychology*, 33, 628-641.
- GUZMÁN-ALFONSO, C. & GUZMÁN-CUEVAS, J. 2012. Entrepreneurial intention models as applied to Latin America. *Journal of Organizational Change Management*, 25, 721-735.
- HAYNES, P. J. 2003. "Are you experienced?" may be the wrong question. *International Journal of Entrepreneurial Behaviour & Research*, 9, 111-128.
- HAYTON, J. C., GEORGE, G. & ZAHRA, S. A. 2002. National Culture and Entrepreneurship: A Review of Behavioral Research. *Entrepreneurship: Theory & Practice*, 26, 33.

- HERRON, L. & SAPIENZA, H. J. 1992. The Entrepreneur and the Initiation of New Venture Launch Activities. *Entrepreneurship Theory and Practice*, 17, 49-55.
- HOFSTEDE, G. (ed.) 1980. *Culture's consequences: International differences in work-related values*, Beverly Hills, CA: Sage Publications.
- HOFSTEDE, G. 1983. National cultures in four dimensions: A research-based theory of cultural differences among nations. *International Studies of Management & Organization*, 13, 46-74.
- HOFSTEDE, G. 2001. *Culture's Consequences: Comparing Values, Behaviors, Institutions and Organizations Across Nations*, Thousand Oaks CA, Sage Publications.
- HOFSTEDE, G. 2010. *Cultures and Organizations: Software of the Mind*, NY, McGraw-Hill.
- HOFSTEDE, G. 2017a. *The Hofstede Centre* [Online]. Available: <http://geert-hofstede.com/countries.html> [Accessed 05/01/2017].
- HOFSTEDE, G. 2017b. *National Culture* [Online]. Available: <https://geert-hofstede.com/national-culture.html> [Accessed 05/01/2017].
- HOFSTEDE, G. & MCCRAE, R. R. 2004. Personality and culture revisited: Linking traits and dimensions of culture. *Cross-Cultural Research*, 38, 52-89.
- HOFSTEDE, G., NOORDERHAVEN, N. G., THURIK, A. R., UHLANER, L. M., WENNEKERS, A. R. M. & WILDEMAN, R. E. 2004. Culture's role in

- entrepreneurship: Self-employment out of dissatisfaction. In: ULIJN, J. & BROWN, T. (eds.) *Innovation, entrepreneurship and culture: The interaction between technology, progress and economic growth*. Cheltenham, UK: Edward Elgar.
- HOUSE, R. J., HANGES, P. J. & JAVIDAN, M. 2004. *Culture, Leadership and Organizations: The Globe Study of 62 Societies*, Thousand Oaks, CA, Sage Publications.
- IAKOVLEVA, T., KOLVEREID, L. & STEPHAN, U. 2011. Entrepreneurial intentions in developing and developed countries. *Education and Training*, 53, 353-370.
- IAKOVLEVA, T. & SOLESVIK, M. Z. 2014. Entrepreneurial intentions in post-soviet economies. *International Journal of Entrepreneurship and Small Business*, 21, 79-100.
- KALTENECKER, N., HOERNDLEIN, C. & HESS, T. 2015. The drivers of entrepreneurial intentions - an empirical study among information systems and computer science students. *Journal of Entrepreneurship Education*, 18, 39-52.
- KARIMI, S., BIEMANS, H. J., NADERI MAHDEI, K., LANS, T., CHIZARI, M. & MULDER, M. in press. Testing the relationship between personality characteristics, contextual factors and entrepreneurial intentions in a developing country. *International Journal of Psychology*.

- KARIMI, S., BIEMANS, H. J. A., LANS, T., CHIZARI, M. & MULDER, M. 2016. The Impact of Entrepreneurship Education: A Study of Iranian Students' Entrepreneurial Intentions and Opportunity Identification. *Journal of Small Business Management*, 54, 187-209.
- KAUTONEN, T., VAN GELDEREN, M. & TORNIKOSKI, E. T. 2013. Predicting entrepreneurial behaviour: A test of the theory of planned behaviour. *Applied Economics*, 45, 697-707.
- KAUTONEN, T., VAN GELDEREN, M. & FINK, M. 2015. Robustness of the theory of planned behavior in predicting entrepreneurial intentions and actions. *Entrepreneurship: Theory and Practice*, 39, 655-674.
- KIBLER, E. 2013. Formation of entrepreneurial intentions in a regional context. *Entrepreneurship & Regional Development*, 25, 293-323.
- KIM, P. H., ALDRICH, H. E. & KEISTER, L. A. 2006. Access (not) denied: The impact of financial, human, and cultural capital on entrepreneurial entry in the United States. *Small Business Economics*, 27, 5-22.
- KNOCKAERT, M. & UCBASARAN, D. 2013. The Service Role of Outside Boards in High Tech Start-ups: A Resource Dependency Perspective. *British Journal of Management*, 24, 69-84.
- KOBIA, M. & SIKALIEH, D. 2010. Towards a search for the meaning of entrepreneurship. *Journal of European Industrial Training*, 34, 110-127.

- KOELLINGER, P., MINNITI, M. & SCHADE, C. 2007. "I think I can, I think I can": Overconfidence and entrepreneurial behavior. *Journal of Economic Psychology*, 28, 502-527.
- KOLVEREID, L. & ISAKSEN, E. 2006. New business start-up and subsequent entry into self-employment. *Journal of Business Venturing*, 21, 866-885.
- KRUEGER, N. F., REILLY, M. D. & CARSRUD, A. L. 2000. Competing models of entrepreneurial intentions. *Journal of Business Venturing*, 15, 411-432.
- LEITCH, C. M., MCMULLAN, C. & HARRISON, R. T. 2013. The Development of Entrepreneurial Leadership: The Role of Human, Social and Institutional Capital. *British Journal of Management*, 24, 347-366.
- LÉVESQUE, M. & MINNITI, M. 2006. The effect of aging on entrepreneurial behavior. *Journal of Business Venturing*, 21, 177-194.
- LIÑÁN, F. 2008. Skill and value perceptions: How do they affect entrepreneurial intentions? *International Entrepreneurship and Management Journal*, 4, 257-272.
- LIÑÁN, F. & CHEN, Y.-W. 2009. Development and Cross-Cultural Application of a Specific Instrument to Measure Entrepreneurial Intentions. *Entrepreneurship Theory and Practice*, 33, 593-617.

- LIÑÁN, F., NABI, G. & KUEGER, N. 2013. British and Spanish entrepreneurial intentions: A comparative study. *La intención emprendedora en reino unido y españa: Un estudio comparativo*, 33, 73-103.
- LIÑÁN, F., URBANO, D. & GUERRERO, M. 2011. Regional variations in entrepreneurial cognitions: Start-up intentions of university students in Spain. *Entrepreneurship & Regional Development*, 23, 187-215.
- LINDELL, M. K. & WHITNEY, D. J. 2001. Accounting for common method variance in cross-sectional research designs. *Journal of Applied Psychology*, 86, 114-121.
- LOCKE, E. A. 2000. Motivation, cognition, and action: An analysis of studies of task goals and knowledge. *Applied Psychology*, 49, 408-429.
- MAN, T. W. Y., LAU, T. & CHAN, K. F. 2002. The competitiveness of small and medium enterprises: A conceptualization with focus on entrepreneurial competencies. *Journal of Business Venturing*, 17, 123-142.
- MANEESRIWONGUL, W. & DIXON, J. K. 2004. Instrument translation process: A methods review. *Journal of Advanced Nursing*, 48, 175-186.
- MARKUS, H. R. & KITAYAMA, S. 1991. Culture and the self : implications for cognitions, emotion, and motivation. *Psychological Review*, 98, 224-253.
- MITCHELMORE, S. & ROWLEY, J. 2010. Entrepreneurial competencies: a literature review and development agenda. *International Journal of Entrepreneurial Behaviour & Research*, 16, 92 - 111.

- MORIANO, J. A., GORGIEVSKI, M., LAGUNA, M., STEPHAN, U. & ZARAFSHANI, K. 2012. A cross-cultural approach to understanding entrepreneurial intention. *Journal of Career Development*, 39, 162-185.
- MURUGESAN, R. & DOMINIC, P. D. D. 2014. Socio, economic and psychological determinants of entrepreneurial intentions: A structural equation model. *Global Business and Economics Review*, 16, 396-415.
- NGUYEN, T. V., BRYANT, S. E., ROSE, J., TSENG, C. H. & KAPASUWAN, S. 2009. Cultural values, market institutions, and entrepreneurship potential: A comparative study of the United States, Taiwan, and Vietnam. *Journal of Developmental Entrepreneurship*, 14, 21-37.
- OBSCHONKA, M., GOETHNER, M., SILBEREISEN, R. K. & CANTNER, U. 2012. Social identity and the transition to entrepreneurship: The role of group identification with workplace peers. *Journal of Vocational Behavior*, 80, 137-147.
- OBSCHONKA, M., SILBEREISEN, R. K., CANTNER, U. & GOETHNER, M. 2015. Entrepreneurial Self-Identity: Predictors and Effects Within the Theory of Planned Behavior Framework. *Journal of Business and Psychology*, 30, 773-794.
- OTHMAN, N. & MANSOR, M. 2012. Entrepreneurial intentions among polytechnic students in Malaysia. *International Business Management*, 6, 517-526.

- OYSERMAN, D., COON, H. M. & KEMMELMEIER, M. 2002. Rethinking individualism and collectivism: Evaluation of theoretical assumptions and meta-analyses. *Psychological Bulletin*, 128, 3-71.
- PALAMIDA, E., PAPAGIANNIDIS, S., XANTHOPOULOU, D. & STAMATI, T. 2015. Capital, Motives, and Their Link to Investment Intentions: The Moderating Role of the Financial Crisis in Greece. *Journal of Small Business Management*, 53, 115-144.
- PALAMIDA, E., XANTHOPOULOU, D., PAPAGIANNIDIS, S. & STAMATI, T. in press. Exploring intentions towards human, social, and financial capital investments in a turbulent economic environment. *International Journal of Entrepreneurship & Innovation*
- PAPAGIANNIDIS, S. & LI, F. 2005. Skills brokerage: A new model for business start-ups in the networked economy. *European Management Journal*, 23, 471-482.
- PRISLIN, R. & WOOD, W. 2005. Social influences in attitude and attitude change. In: ALBARRACIN, D., JOHNSON, B. & ZANNA, M. (eds.) *The handbook of attitudes*. Mahwah: Lawrence Erlbaum Associates.
- PRUETT, M., SHINNAR, R., TONEY, B., LLOPIS, F. & FOX, J. 2009. Explaining entrepreneurial intentions of university students: A cross-cultural study. *International Journal of Entrepreneurial Behaviour and Research*, 15, 571-594.



- ROBINSON, P. B. & SEXTON, E. A. 1994. The effect of education and experience on self-employment success. *Journal of Business Venturing*, 9, 141-156.
- ROY, R., AKHTAR, F. & DAS, N. in press. Entrepreneurial intention among science & technology students in India: extending the theory of planned behavior. *International Entrepreneurship and Management Journal*, 1-29.
- SAHUT, J. M., GHARBI, S. & MILI, M. 2015. Identifying factors key to encouraging entrepreneurial intentions among seniors. *Canadian Journal of Administrative Sciences*, 32, 252-264.
- SARASVATHY, S. D. 2001. Causation and effectuation: Toward a theoretical shift from economic inevitability to entrepreneurial contingency. *Academy of Management Review*, 26, 243-263.
- SCHIMMACK, U., OISHI, S. & DIENER, E. 2005. Individualism: A valid and important dimension of cultural differences between nations. *Personality and Social Psychology Review*, 9, 17-31.
- SHANE, S. & CABLE, D. 1999. *Social capital and the financing of new ventures*, Cambridge, MA MIT.
- SHNEOR, R., METIN CAMGÖZ, S. & BAYHAN KARAPINAR, P. 2013. The interaction between culture and sex in the formation of entrepreneurial intentions. *Entrepreneurship and Regional Development*, 25, 781-803.

- SIU, W. S. & LO, E. S. 2013. Cultural contingency in the cognitive model of entrepreneurial intention. *Entrepreneurship: Theory and Practice*, 37, 147-173.
- SOLESVIK, M. Z. 2013. Entrepreneurial motivations and intentions: Investigating the role of education major. *Education and Training*, 55, 253-271.
- SOMMER, L. & HAUG, M. 2011. Intention as a cognitive antecedent to international entrepreneurship-understanding the moderating roles of knowledge and experience. *International Entrepreneurship and Management Journal*, 7, 111-142.
- ST-JEAN, É., NAFA, A., TREMBLAY, M., JANSSEN, F., BARONET, J. & LOUÉ, C. 2014. Entrepreneurial intentions of university students: An international comparison between African, European and Canadian students. *International Journal of Entrepreneurship and Innovation Management*, 18, 95-114.
- SCHWARTZ, S. H. (1999). A theory of cultural values and some implications for work. *Applied Psychology: An International Journal*, 48, 23-47.
- TRIANDIS, H. C. 1995. *Individualism and Collectivism*, Boulder, CO, Westview Press.
- TRIANDIS, H. C. & SUH, E. M. 2002. Cultural influences on personality. *Annual Review of Psychology*, 53, 133-160.
- TATARKO, A. & SCHMIDT, P. 2016. Individual social capital and the implementation of entrepreneurial intentions: The case of Russia. *Asian Journal of Social Psychology*, 19, 76-85.

- VINOGRADOV, E., KOLVEREID, L. & TIMOSHENKO, K. 2013. Predicting entrepreneurial intentions when satisfactory employment opportunities are scarce. *Education and Training*, 55, 719-737.
- VAN HOOFT, E. A. J. & DE JONG, M. 2009. Predicting job seeking for temporary employment using the theory of planned behaviour: The moderating role of individualism and collectivism. *Journal of Occupational and Organizational Psychology*, 82, 295-316.
- VANDENBERG, R. J. & LANCE, C. E. 2000. A review and synthesis of the measurement invariance literature: Suggestions, practices, and recommendations for organizational research. *Organizational Research Methods*, 3, 4-70.
- VARAMÄKI, E., JOENSUU, S., TORNIKOSKI, E. & VILJAMAA, A. 2015. The development of entrepreneurial potential among higher education students. *Journal of Small Business and Enterprise Development*, 22, 563-589.
- WESTLUND, H. & BOLTON, R. 2003. Local Social Capital and Entrepreneurship. *Small Business Economics*, 21, 77.
- WOOD, R. & BANDURA, A. 1989. Social cognitive theory of organisational management. *Academy of Management Review*, 14, 361-384.
- WRIGHT, M., ROBBIE, K. & ENNEW, C. 1997. Serial Entrepreneurs. *British Journal of Management*, 8, 251-268.

- WUNSCH, G., RUSSO, F. & MOUCHART, M. 2010. Do We Necessarily Need Longitudinal Data to Infer Causal Relations? *Bulletin of Sociological Methodology*, 106, 5-18.
- ZACHARAKIS, A. L. & SHEPHERD, D. A. 2005. A non-additive decision-aid for venture capitalists' investment decisions. *European Journal of Operational Research*, 162, 673-689.
- ZAMPETAKIS, L. A., LERAKIS, M., KAFETSIOS, K. & MOUSTAKIS, V. S. 2016. The moderating role of anticipated affective ambivalence in the formation of entrepreneurial intentions. *International Entrepreneurship and Management Journal*, 12, 815-838.
- ZAPKAU, F. B., SCHWENS, C., STEINMETZ, H. & KABST, R. 2015. Disentangling the effect of prior entrepreneurial exposure on entrepreneurial intention. *Journal of Business Research*, 68, 639-653.
- ZHANG, P., WANG, D. D. & OWEN, C. L. 2015. A study of entrepreneurial intention of university students. *Entrepreneurship Research Journal*, 5, 61-82.

## TABLES

**Table 1 Measures**

| Scales/Sub-scales  | Items  | Options                               | Cronbach's $\alpha$ |
|--|--|---------------------------------------|---------------------|
| <b>Human Capital (Palamida et al., 2015)</b>   |  |                                       |                     |
| <b>Skills from education</b><br>Please rate your level in the six following skills,<br>gained through education:           | Management<br>Marketing<br>Financial<br>Legal<br>Technical<br>IT | (1)=no skill to<br>(5)=advanced skill | $\alpha=.74$        |
| <b>Skills from experience</b><br>Please rate your level in the six following skills,<br>gained through working experience: |  |                                       | $\alpha=.72$        |
| <b>Social Capital (Chen et al., 2009)</b>  |  |                                       |                     |
| <b>Bonding Social Capital</b>  |  |                                       |                     |
| Members within the social circle.  | Family members<br>Relatives                                      | (1)=many/all to<br>(5)=a few/none     | $\alpha=.70$        |
| Contacts with the members of the social circle.  | Neighbours<br>Friends  |                                       | $\alpha=.67$        |
| Trust in the members of the social circle.   | Co-workers/colleagues<br>Old classmates                          |                                       | $\alpha=.75$        |
| Help gained from members within the social circle.   |  |                                       | $\alpha=.77$        |

|  |  |   |              |
|--|--|---|--------------|
| Level of resources-assets possessed by members of the social circle. | Certain political power<br>Wealth or owners of an enterprise or company<br>Broad connections with others<br>High reputation/influential<br>High school or more education<br>Professional job |   | $\alpha=.74$ |
| <b>Bridging Social Capital</b>                                       |  |   |              |
| Contact with groups/organisations                                    | Governmental and Political<br>Economic   | (1)=all/very often to<br>(5)=none/never | $\alpha=.77$ |
| Help from groups/organisations                                       | Social<br>Cultural<br>Recreational and Leisure   |   | $\alpha=.88$ |
| Level of resources-assets possessed by groups/organisations          | Significant power for decision making<br>Solid financial basis or other resources<br>Broad social connections<br>Great social influence<br>Skills and knowledge pools                        |   | $\alpha=.87$ |

---

---

**Financial Capital (Palamida et al., 2015)**

Please indicate your annual household income:

- (1)=Less than £10,000
- (2)=£10,000 to £19,999
- (3)=£20,000 to £29,999
- (4)=£30,000 to £39,999
- (5)=£40,000 to £49,999
- (6)=£50,000 to £59,999
- (7)=£60,000 or more

---

**TPB (van Hooft and de Jong, 2009)****Personal Attitudes**

Please rate your level of disagreement/agreement with the following statement:

- It is wise for me to engage in investment activities.
- It is useful for me to engage in investment activities.
- I think it is interesting to engage in investment activities.

- (1)=strongly disagree to
  - (5)=strongly agree
- $\alpha=.90$

**Subjective Norms**

- The person most important to me thinks that I should engage in investment activities.
- Most people who are important to me think that I should engage in investment activities.

$\alpha=.85$  ( $r=.74$ )

**Perceived Behavioural Control**

Overall I feel confident about being able to engage in investment activities.

$\alpha=.86$

I can overcome any obstacles or problems that could prevent me from engaging in investment activities.

Engaging in investment activities is within my personal control.

Engaging in investment activities is easy.

I think that I possess the abilities that are needed to be able to engage in investment activities.

**Investment Intentions**

I intend to engage in investment activities within the next three months.

$\alpha=.83$

I expect that I will engage in investment activities in the next three months.

How much time do you intend to spend on investment activities during the next three months?

(1)=no time at all to

(5)=very much time

---



**Table 2 Means, standard deviations, and correlations between the study variables for the Total Sample (N=194) and the two national samples separately (English, N=97; Greek, N=97)**

| Total Sample |                       |      |      |       |       |        |       |       |       |        |       |       |
|--------------|-----------------------|------|------|-------|-------|--------|-------|-------|-------|--------|-------|-------|
|              |                       | Mean | SD   |       |       |        |       |       |       |        |       |       |
|              |                       |      |      | 1     | 2     | 3      | 4     | 5     | 6     | 7      |       |       |
| 1            | Human Capital         | .00  | .916 | -     |       |        |       |       |       |        |       |       |
| 2            | Social Capital        | .00  | .762 | .14   | -     |        |       |       |       |        |       |       |
| 3            | Financial Capital     | 2.71 | 2.06 | -.06  | .10   | -      |       |       |       |        |       |       |
| 4            | Personal Attitude     | 3.21 | .93  | .32** | .08   | -.13   | -     |       |       |        |       |       |
| 5            | Subjective Norms      | 2.97 | .99  | .39** | .04   | -.23** | .75** | -     |       |        |       |       |
| 6            | Behavioural Control   | 2.93 | .75  | .27** | .26** | -.08   | .70** | .68** | -     |        |       |       |
| 7            | Investment Intentions | 2.43 | .98  | .39** | .15*  | -.27** | .66** | .75** | .63** | -      |       |       |
|              |                       |      |      |       |       |        |       |       |       |        |       |       |
| English      |                       |      |      | Greek |       |        |       |       |       |        |       |       |
|              |                       | Mean | SD   | Mean  | SD    | 1      | 2     | 3     | 4     | 5      | 6     | 7     |
| 1            | Human Capital         | -.30 | .96  | .30   | .76   | -      | .20*  | .06   | .21*  | .27**  | .18   | .19   |
| 2            | Social Capital        | .17  | .62  | -.17  | .85   | .27**  | -     | -.03  | .15   | .19    | .36** | .35** |
| 3            | Financial Capital     | 3.43 | 2.33 | 1.98  | 1.44  | .06    | .08   | -     | -.07  | -.28** | -.10  | -.25* |
| 4            | Personal Attitude     | 2.76 | .89  | 3.67  | .73   | .18    | .32** | .11   | -     | .60**  | .43** | .62** |
| 5            | Subjective Norms      | 2.36 | .84  | 3.59  | .71   | .25*   | .30** | .12   | .70** | -      | .50** | .49** |
| 6            | Behavioural Control   | 2.65 | .78  | 3.21  | .60   | .17    | .43** | .13   | .77** | .69**  | -     | .56** |
| 7            | Investment Intentions | 1.85 | .68  | 3.00  | .90   | .35**  | .35** | .03   | .46** | .76**  | .57** | -     |

Note. \*  $p < .05$ ; \*\*  $p < .01$ ; Correlations below/above the diagonal refer to the English/Greek group

**Table 3 Structural equation analyses: Standardized maximum likelihood estimates**

|              | Model   | $\chi^2$ | df  | $\chi^2/df$ | NFI  | IFI  | CFI  | RMSEA | SRMR | Comparison | $\Delta\chi^2$ | $\Delta df$ | p     |
|--------------|---|----------|-----|-------------|------|------|------|-------|------|------------|----------------|-------------|-------|
| Total Sample | 1 Hypothesised Free Model (HM )   | 15.49    | 3   | 5.16        | .97  | .98  | .98  | .15   | .03  |            |                |             |       |
|              | 2 Alternative Free Model 1 (HM +all direct paths)                         | .00      | .00 | -           | 1.00 | 1.00 | 1.00 | -     | .00  |            |                |             |       |
|              | 3 Alternative Free Model 2 (HM, excluding ns paths)                       | 5.71     | 7   | .57         | .99  | 1.00 | 1.00 | .00   | .02  | <b>1-3</b> | 9.78           | 4           | <.05  |
| Multi-group  | 1 Hypothesised Free Model (HM )   | 22.43    | 6   | 3.74        | .95  | .97  | .96  | .12   | .04  |            |                |             |       |
|              | 2 Alternative Free Model 1 (HM +all direct paths)                         | .00      | .00 | -           | 1.00 | 1.00 | 1.00 | -     | .00  |            |                |             |       |
|              | 3 Alternative Free Model 2 (HM, excluding ns paths in both groups)        | 5.60     | 10  | .56         | .99  | 1.00 | 1.00 | .00   | .03  | <b>1-3</b> | 16.83          | 4           | <.01  |
|              | 4 Alternative Constrained Model 2 (HM, excluding ns paths in both groups) | 68.26    | 22  | 3.10        | .86  | .90  | .89  | .10   | .08  | <b>3-4</b> | 62.66          | 12          | <.001 |

*Note.*  $\chi^2$ =Chi-square, df=degrees of freedom, NFI=Normed Fit Index, IFI=Incremental Fit Index, CFI=Comparative Fit Index, RMSEA=Root Mean Square error of Approximation, SRMR=Standardized root mean square residual.

**Table 4 Summary of results: Direct and indirect effects**

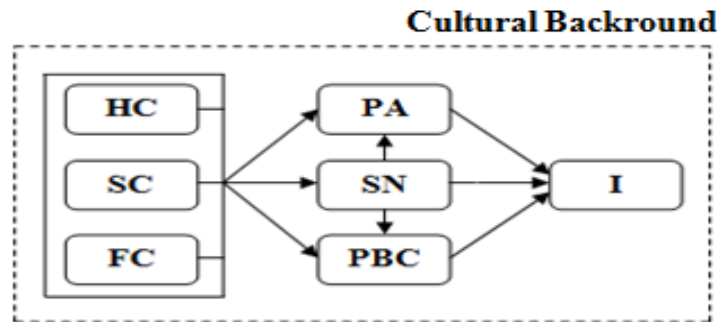
|     | <b>Paths</b>                                    | <b>Total</b> | <b>English</b> | <b>Greek</b> |
|-----|---|--------------|----------------|--------------|
|     | Per. Attitudes→Intentions                       | •            |                | •            |
|     | Sub. Norms→Intentions                           | •            | •              |              |
|     | Per. Control→Intentions                         | •            |                | •            |
| H1a | Sub. Norms→Per. Attitudes→Intentions            | •            |                | •            |
| H1b | Sub. Norms→Per. Control→Intentions              | •            |                | •            |
|     | Human Cap.→Intentions                           | •            | •              |              |
|     | Social Cap.→Intentions                          |              |                | •            |
|     | Financial Cap. →Intentions                      | • (-)        |                | • (-)        |
| H2a | Human Cap.→Per. Attitudes→Intentions            |              |                |              |
| H2b | Human Cap.→Sub. Norms→Intentions                | •            |                |              |
| H2c | Human Cap.→Per. Control→Intentions              |              |                |              |
| H3a | Social Cap.→Per. Attitudes→Intentions           |              |                |              |
| H3b | Social Cap.→Sub. Norms→Intentions               |              | •              |              |
| H3c | Social Cap.→Per. Control→Intentions             | •            |                | •            |
| H4a | Financial Cap.→Per. Attitudes→Intentions        |              |                |              |
| H4b | Financial Cap.→Sub. Norms→Intentions            | •            |                |              |
| H4c | Financial Cap.→Per. Control→Intentions          |              |                |              |
|     | Human Cap.→Sub. Norms→Per. Attitudes→Intentions | •            |                | •            |
|     | Human Cap.→Sub. Norms→Per. Control→Intentions   | •            |                | •            |

|   |       |       |
|---|-------|-------|
| Social Cap. → Sub. Norms → Per. Attitudes → Intentions    |       |       |
| Social Cap. → Sub. Norms → Per. Control → Intentions      |       |       |
| Financial Cap. → Sub. Norms → Per. Attitudes → Intentions | • (-) | • (-) |
| Financial Cap. → Sub. Norms → Per. Control → Intentions   | • (-) | • (-) |

*Note.* (-) negative relationship

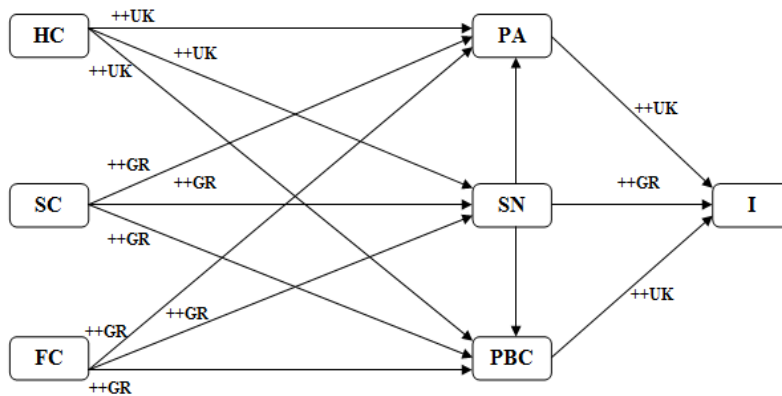
## FIGURES

**Figure 1A Conceptual model based on Entrepreneurial Intentionality Model (Bird, 1988) and Theory of Planned Behaviour (Ajzen, 1991; Ajzen & Fishbein, 2005)**



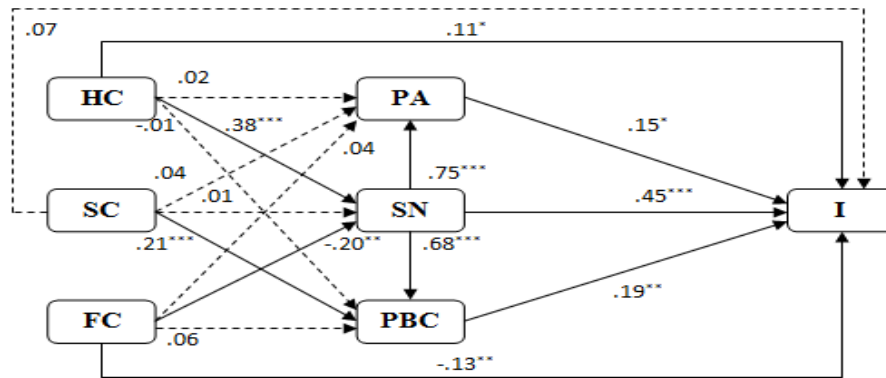
*Note.* HC= Human Capital, SC= Social Capital, Financial Capital, PA=Personal Attitude, SN= Subjective Norms, PBC= Perceived Behavioural Control, I=Investment Intention, Cultural background= Individualistic vs Collectivistic culture

**Figure 1B Conceptual model of cross-cultural differences between individualistic and collectivistic cultural backgrounds**



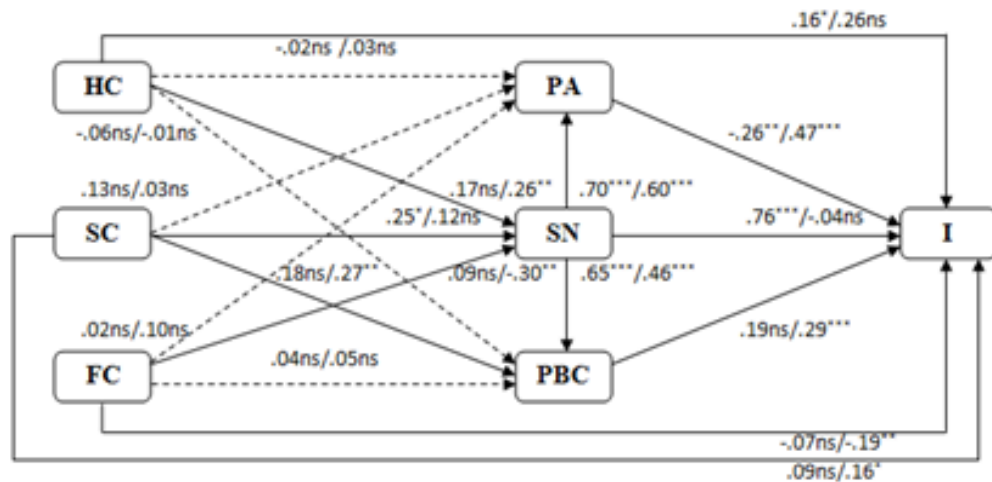
*Note.* ++UK RELATIONSHIP STRONGER IN ENGLISH SAMPLE WITH AN INDIVIDUALISTIC CULTURAL BACKGROUND, ++GR RELATIONSHIP STRONGER IN GREEK SAMPLE WITH A COLLECTIVISTIC CULTURAL BACKGROUND; HC= Human Capital, SC= Social Capital, Financial Capital, PA=Personal Attitude, SN= Subjective Norms, PBC= Perceived Behavioural Control, I=Investment Intention

**Figure 2 Standardised estimates (Total sample, N=194)**



Note. HC=Human Capital, SC=Social Capital, Financial Capital, PA=Personal Attitudes, SN=Subjective Norms, PBC=Perceived Behavioural Control, I=Investment Intentions; \*\*\* $p < .001$ , \*\* $p < .01$ , \* $p < .05$ ; Dashed lines indicate insignificant relationships

**Figure 3 Standardised estimates in the multi-group path analysis (English Group, N=97 and Greek Group, N=97)**



Note. HC=Human Capital, SC=Social Capital, Financial Capital, PA=Personal Attitudes, SN=Subjective Norms, PBC=Perceived Behavioural Control, I=Investment Intentions; Group1: English / Group2: GR; \*\*\* $p < .001$ , \*\* $p < .01$ , \* $p < .05$ ; Dashed lines indicate insignificant relationships in both groups